It is well known that when patching bottom it is necessary to keep the doors closed as much as possible in order to avoid chills, which are likely to develop into cracks and leaks in the bottom. Many beautiful octahedral steel crystals have been discovered in tearing out old furnace bottoms.

3600 (11.8 ft.)

When the pressure in the furnace gets higher than the atmosphere a sharp sting of flame is developed and fuel must be burned to maintain it. Some melters and many heaters keep the doors of their furnaces decorated with a halo of flame. In some cases it is necessary to maintain this sting owing to the defective design of

3200 (10.50 ft.)

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FIG. 142.—Sections Showing Profile of Hearth Slope According to Professor